1. Record Nr. UNINA9910254194403321

Autore	Xu Yuhua
Titolo	Game-theoretic Interference Coordination Approaches for Dynamic Spectrum Access / / by Yuhua Xu, Anpalagan Alagan
Pubbl/distr/stampa	Singapore : , : Springer Singapore : , : Imprint : Springer, , 2016
ISBN	981-10-0024-7
Edizione	[1st ed. 2016.]
Descrizione fisica	1 online resource (100 p.)
Collana	SpringerBriefs in Electrical and Computer Engineering, , 2191-8112
Disciplina	621.38215
Soggetti	Electrical engineering Computer organization Information theory Microwaves Optical engineering Communications Engineering, Networks Computer Systems Organization and Communication Networks Information and Communication, Circuits Microwaves, RF and Optical Engineering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Preface; Contents; Acronyms; 1 Introduction; 1.1 Interference Coordination in Dynamic Spectrum Access; 1.1.1 Preliminaries; 1.1.2 Challenges and Problems; 1.2 Game-Theoretic Solutions for Interference Coordination; 1.2.1 Motivation of Applying Game Models; 1.2.2 A General Framework of Game-Theoretic Solutions; 1.3 Organization and Summary; References; 2 Distributed Interference Mitigation in Time-Varying Radio Environment; 2.1 Introduction; 2.2 System Model and Problem Formulation; 2.2.1 System Model; 2.2.2 Problem Formulation; 2.3 Interference Mitigation Game in Time-Varying Environment 2.3.1 Game Model2.3.2 Analysis of Nash Equilibrium; 2.4 Achieving NE Using Stochastic Learning Automata; 2.4.1 Algorithm Description; 2.4.2 Convergence Analysis; 2.5 Simulation Results and Discussion; 2.5.1 Convergence Behavior; 2.5.2 Performance Evaluation; 2.6 Concluding Remarks; References; 3 Game-Theoretic MAC-Layer Interference

Coordination with Orthogonal Channels; 3.1 Introduction; 3.2 Motivation, Definition, and Discussion of MAC-Layer Interference; 3.2.1 Motivation and Definition; 3.2.2 Discussion on the Impact of Channel Fading; 3.3 System Model and Problem Formulation
3.3.1 Bilateral Interference Networks3.3.2 MAC-Layer Interference Minimization; 3.4 MAC-Layer Interference Minimization Game; 3.4.1 Graphical Game Model; 3.4.2 Analysis of Nash Equilibrium; 3.5 The Binary Log-Linear Learning Algorithms for Achieving Best NE; 3.5.1 Algorithm Description; 3.5.2 Convergence Analysis; 3.6 Simulation Results and Discussion; 3.6.1 Scenario Setup; 3.6.2 Scenario with No Fading; 3.6.3 Scenario with Fading; 3.7 Extension to Unilateral Interference CRNs; 3.7.1 System Model; 3.7.2 Simulation Results; 3.8 Concluding Remarks; References
4 Game-Theoretic MAC-Layer Interference Coordination with Partially Overlapping Channels4.1 Introduction; 4.2 Interference Models and Problem Formulation; 4.2.1 MAC-Layer Interference Model with Partially Overlapping Channels; 4.2.2 Problem Formulation; 4.3 Graphical Game Model ; 4.3.1 Graphical Game Model; 4.3.2 Analysis of Nash Equilibrium; 4.4 Simultaneous Log-Linear Learning Algorithm with Heterogeneous Rates; 4.4.1 Algorithm Description; 4.4.2 Convergence Analysis; 4.5 Simulation Results and Discussion; 4.5.1 Scenario Setup; 4.5.2 Convergence Behavior; 4.5.3 Performance Evaluation
4.6 Concluding RemarksReferences; 5 Robust Interference Coordination with Dynamic Active User Set; 5.1 Introduction; 5.2 System Model and Problem Formulation; 5.2.1 System Model; 5.2.2 Problem Formulation; 5.3 Channel Sensing Order Selection Games; 5.3.1 State-Based Order Selection Game; 5.3.2 Robust Order Selection Game; 5.3.3 Distributed Learning Algorithm with Dynamic Active User Set; 5.4 Simulation Results and Discussion; 5.4.1 Convergence Behavior; 5.4.2 Throughput Performance; 5.5 Concluding Remarks; References; 6 Future Direction and Research Issues
6.1 Hierarchical Games for Small Cell Networks

Sommario/riassunto

Written by experts in the field, this book is based on recent research findings in dynamic spectrum access for cognitive radio networks. It establishes a game-theoretic framework and presents cutting-edge technologies for distributed interference coordination. With game-theoretic formulation and the designed distributed learning algorithms, it provides insights into the interactions between multiple decision-makers and the converging stable states. Researchers, scientists and engineers in the field of cognitive radio networks will benefit from the book, which provides valuable information, useful methods and practical algorithms for use in emerging 5G wireless communication.